

**What Is Claimed Is:**

1. A photomask etch chamber, comprising:
  - a substrate support member disposed inside the chamber, wherein the substrate support member is configured to support a photomask substrate;
  - a ceiling disposed on the chamber; and
  - an endpoint detection system configured to detect a peripheral region of the photomask substrate.
2. The chamber of claim 1, wherein the endpoint detection system is disposed through a peripheral region of the ceiling and positioned directly above the peripheral region of the photomask substrate.
3. The chamber of claim 1, wherein the endpoint detection system is disposed through a peripheral region of the substrate support member and positioned directly below the peripheral region of the photomask substrate.
4. The chamber of claim 1, wherein the endpoint detection system is an interferometer endpoint detection system.
5. A photomask etch chamber, comprising:
  - a substrate support member disposed inside the chamber, wherein the substrate support member is configured to support a photomask substrate;
  - a ceiling disposed on the chamber; and
  - an interferometer endpoint detection system disposed through a peripheral region of the ceiling.
6. The chamber of claim 5, wherein the interferometer endpoint detection system is disposed directly above a corner region of the photomask substrate.
7. The chamber of claim 5, wherein the photomask substrate is about 6 inches wide and about 6 inches long and the interferometer endpoint detection system is disposed about 2.8 inches from a horizontal center line and about 2.8 inches from a vertical center line of the photomask substrate.

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8. The chamber of claim 5, wherein the interferometer endpoint detection system is disposed directly above a peripheral region of the photomask substrate.
9. The chamber of claim 5, wherein the interferometer endpoint detection system is configured to detect a peripheral region of the photomask substrate.
10. The chamber of claim 5, wherein the interferometer endpoint detection system is configured to detect one or more test patterns disposed on a peripheral region of the photomask substrate.
11. The chamber of claim 5, wherein the interferometer endpoint detection system is configured to detect one or more test patterns disposed on a corner region of the photomask substrate.
12. The chamber of claim 5, wherein the interferometer endpoint detection system comprises:
  - a light source for sending a light beam to a surface of the substrate; and
  - a light detector for measuring the intensity of the light beam reflected from the substrate surface.
13. The chamber of claim 5, wherein the interferometer endpoint detection system further comprises a focusing assembly for focusing the light beam to a spot on the substrate surface.
14. The chamber of claim 5, wherein the interferometer endpoint detection system further comprises a computer for calculating at least a portion of the waveform spectra of the reflected light beam.
15. The chamber of claim 14, wherein the computer is configured to compare the waveform spectra of the reflected light beam with a stored characteristic waveform spectra pattern.
16. A photomask etch chamber, comprising:
  - a substrate support member disposed inside the chamber, wherein the substrate support member is configured to support a photomask substrate; and

an interferometer endpoint detection system disposed through a peripheral region of the substrate support member.

17. The chamber of claim 16, wherein the interferometer endpoint detection system is disposed directly below a corner region of the photomask substrate.

18. The chamber of claim 16, wherein the photomask substrate is about 6 inches wide and about 6 inches long and the interferometer endpoint detection system is disposed about 2.8 inches from a horizontal center line and about 2.8 inches from a vertical center line of the photomask substrate.

19. The chamber of claim 16, wherein the interferometer endpoint detection system is disposed directly below a peripheral region of the photomask substrate.

20. The chamber of claim 16, wherein the interferometer endpoint detection system is configured to detect a peripheral bottom region of the photomask substrate.

21. The chamber of claim 16, wherein the interferometer endpoint detection system is configured to detect one or more test patterns disposed on a peripheral region of the photomask substrate.

22. The chamber of claim 16, wherein the interferometer endpoint detection system is configured to detect one or more test patterns disposed on a corner region of the photomask substrate.